

Patent Claims

1. Process for operating a climate control system in the passenger compartment of a motor vehicle, wherein the climate control system can be operated in a recirculation mode in which internal air is recirculated within the passenger compartment or in a fresh air mode in which at least a portion of air supplied to the passenger compartment is fresh air, and wherein the climate control system is normally operated in the recirculation mode, thereby characterized, that the climate control system (12) is switched into the fresh air mode upon exceeding a predetermined CO₂-threshold value measured in the passenger compartment (2) of the motor vehicle (1).
2. Process according to Claim 1, thereby characterized, that in response to the opening of an ashtray (9, 11) located within the passenger compartment (2) of the motor vehicle (1) the climate control (12) is automatically switched into the fresh air mode.
3. Process according to Claim 1 or 2, thereby characterized, that the climate control system (12) is operated with CO₂ as coolant.
4. Process according to Claim 1, 2 or 3, thereby characterized, that the CO₂-threshold level is set at 800 ppm.

5. Process according to one of Claims 1 through 4, thereby characterized, that upon switching into the fresh air mode the fresh air is supplied to the foot space (20) of the motor vehicle (1).
6. Climate control system for a motor vehicle, which is switchable between a recirculation mode, in which internal air is recirculated within the passenger compartment of the motor vehicle, and a fresh air mode, in which at least a portion of air supplied to the passenger compartment is fresh air, and which includes a compressor, an evaporator and a control device, thereby characterized, that at least one CO₂-sensor (26) is provided in the passenger compartment (2) of the motor vehicle (1), which CO₂-sensor (26), upon detecting a CO₂ level exceeding a CO₂-threshold value in the passenger compartment (2) of the motor vehicle (1), provides a signal to the control device (25) for switching the climate control system (12) from recirculation mode to fresh air mode.
7. Climate control system according to Claim 6, thereby characterized, that the CO₂-sensor (26) is located in the foot space (20) of the motor vehicle (1).
8. Climate control system according to Claim 6 or 7, thereby characterized, that in the inner space (2) of the motor vehicle (1) at least one sensor (27, 28) is provided, with which it can be detected whether smoking is

occurring within the passenger compartment (2) of the motor vehicle (1).

9. Climate control system according to Claim 8, thereby characterized, that the at least one sensor (26, 27) is so designed that it detects the opening of an ashtray (9, 11).
10. Climate control system according to one of Claims 6 through 9, thereby characterized, that the control device (25) is in operative association with an adjustment device or actuator (24), which is provided for adjusting a control element (25) between recirculation mode and fresh air mode.
11. Climate control system according to one of Claims 6 through 10, thereby characterized, that CO₂ is provided as coolant for the evaporator (24).
12. Climate control system according to one of Claims 6 through 11, thereby characterized, that the evaporator (14) is provided with an expansion valve (29) for switching off of the evaporator (14).
13. Climate control system according to one of Claims 6 through 12, thereby characterized, that on the vacuum side the compressor (31) is provided with a valve (33) for switching off of the compressor (14) {sic}.